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To: Examiner Bala From: JubinskyJ
Fax: ~~04709746-8717~~ 203-308-4556 Date: September 26, 2003
Phone: 203-321-2913 Pages: [Click here and type number of pages] 3
Re: USSN 09/779,604 CC: [Click here and type name]

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•Comments:

Examiner Bala, We would like to set up a telephone interview with you on Oct 1st or 2nd to discuss the following points in the attached document.

Jim Jubinsky

Not to be entered
Please bring immediately to
Examiner Balasubramian

Example 72

ISSUES FOR 09/779,604

DISCUSSION PURPOSES ONLY – NOT TO BE PLACED IN OFFICIAL RECORD

1) 112 Rejections – This case is claiming a method to produce an intermediate compound, 2-halo-4,6-bisaryl-s-triazine (Formula III), that may be used to make the final compound (Formula I). The method to make Formula I, via Formula III, was already patented in parent case U.S. Patent No. 6,486,316. The claims in the parent case contains the term "reaction promoter" and has the limitation where the solvent is different than the reaction promoter (see claim 1 in the '316 patent). Applicants overcame the "reaction promoter" rejection in the parent case and the amendment stating that the reaction promoter was different than the solvent was accepted and allowed in the parent case. Why are these same recitations not acceptable in the present divisional?

In parent application, we gave definition of solvent (compound use in excess to dissolve, or at least partially dissolve another compound). Would that help in distinguishing over reaction promoter?

Please note that the proviso in claim 1 means that there must be three separate and distinct components in addition to the reactants (Lewis acid, reaction promoter and solvent). No prior art examples disclose or teach all three in one reaction.

We are also willing to add a claim limitation that this process will produce the compound of Formula III in higher selectivity and/or yield than with Lewis Acid alone. Would that help?

2) Office Action should not be final – The enablement rejection is new and not a result of an amendment. Therefore, the final rejection (see office action summary sheet) is not proper (see 706.07(a)). In addition, the Office Action on page 14 states it is not final? We are not sure which is correct?

3) Enablement rejection is improper – The test for enablement is whether experimentation is needed to practice the invention and if so, whether it is undue. (See MPEP 2164.01). Applicants have shown a wide variety of examples on how to practice the invention. No experimentation is required. It appears that the application is being rejected because the Office Action is requiring that one must know a priori whether a specific compound is a reaction promoter or solvent. However, that is not the test for enablement as shown above and in MPEP 2164.01

4) Stevenson reference (US 6,242,598 B1) – Applicants can swear behind the Stevenson reference – Would that be enough to overcome the remaining rejection?

Assuming for sake of argument that Stevenson is a prior art reference, Stevenson actually helps us by stating how difficult it is to get an asymmetric triazine compound (see col. 1, lines 23 to 35) directly from cyanuric chloride using only Friedel-Crafts chemistry. Stevenson best method to make asymmetric triazines is to use a three step process (see col. 5, lines 50 to 67) that improves upon the four step prior art processes starting from cyanuric chloride to overcome the selectivity problem (see column 1, lines 36-48). Stevenson uses aryloxy protecting groups, instead of the alkoxy or alkylthio protecting groups used in the prior art, which eliminates the step of making 2-chloro-4,6-bisaryl-s-triazine. These prior art processes are also mentioned in our application (please see schemes 3 and 4 on pages 6 and 7). In contrast, this reaction promoter case can overcome the selectivity problem highlighted in Stevenson using one step by making 2-halo-4,6-bisaryl-s-triazine from cyanuric chloride. Stevenson obviously can not teach this invention if he is teaching a three step process to

make asymmetric triazines that does not involve making 2-halo-4,6-bisaryl-s-triazine. Furthermore, Stevenson only suggests the combination of using protic and Lewis acids in the 3rd step to displace the aryloxy group and replace it directly with a resorcinol based group to make the asymmetric triazines, without making the 2-chloro-4,6-bisaryl-s-triazine intermediate. It does not teach or suggest using the combination with cyanuric chloride in the first step. In fact, it teaches away from it.

5) Teaching or suggestion to make mono-halo asymmetric triazine compounds – There is no teaching or suggestion in any of the references where the combination of Lewis Acid and reaction promoter with cyanuric halide would lead to an increase in selectivity to monohalo asymmetric triazines. With all due respect, this was never discussed in any of the Office Actions.

6) Rebutting Office Action arguments – We would like to make some brief comments on your rebuttals starting on page 11 of the office action

- 1) We were only trying to state that all examples that you mentioned in Hardy (US 3,118,887; Examples 2,4,8,11,12, 15) using Friedel-Crafts chemistry from cyanuric halide was for symmetrical triazines. Therefore, there is no teaching in these examples using Friedel-Craft chemistry to make asymmetrical triazines or 2-halo-4,6-bisaryl-s-triazine from cyanuric halide.
- 2) Duennenberger (US 3,394,134) was only used to point out that it is a well known fact that asymmetrical triazine was difficult to make and that Hardy's teaching, **which is merely a statement neither supported by Examples nor by prior art reference**, that asymmetric bis(aryl)triazines can be made in any significant yield simply by reacting two moles of the aryl substituent is wrong. This is supplemented by Stevenson, which discusses the selectivity problem (col. 1, lines 23 to 35), and the references cited therein.
- 3) Hardy teaches Aluminum chloride, i.e., $AlCl_3$ - which is a Lewis Acid. Hardy does not teach the use of another type of acid. Hardy's acid catalyst is a Lewis Acid.
- 4) Fritzsche never teaches the combination of Lewis Acid and another type of acid in one reaction. More importantly, Fritzsche never teaches that such a combination would lead to selective high yield production of asymmetric triazine compounds.
- 5) The closest prior art for Friedel-Craft reaction is $AlCl_3$, cyanuric chloride, without a reaction promoter. A direct comparison with the reaction promoter has been made in the application in several examples to demonstrate dramatic effect showing the surprising and unexpected selectivity and reactivity for the formation of 2-halo-4,6-bisaryl-s-triazines.

Finally, in the parent application, you gave for reason for allowance:

"The process for making triazine UV absorber of formula I, with specific Ar_1 , Ar^2 , R_1 , R_2 , R_3 , R_4 , R_5 and Y, using Lewis Acid and reaction promoters embraced in instant claims was not found to be anticipated or rendered obvious by the prior art of record." The same reason should be given for the intermediate of Formula III since no prior art reference discloses the preparation of the intermediate using a reaction facilitator consisting of both Lewis acid and reaction promoter directly from cyanuric halide.